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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/774,312

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EXAMINER

FUJITA, KATRINA R

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/774,312	Applicant(s) LEVY ET AL.	
	Examiner KATRINA FUJITA	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to Applicant's remarks received on April 21, 2008. Claims 1-6, 8 and 9 remain pending.
2. In response to applicant's request for reconsideration regarding the previous Office action, the following corrective action is taken:

Specifically, a typographical error in the Examiner's remarks with regard to the 112 6th paragraph limitations will be remedied such that it will be clear that a showing of the requirements have been met by providing a revised Office Action herein.

A new shortened statutory time period of three (3) MONTHS and a new statutory period for reply is restarted to begin with the mailing date of this letter.

Claim Rejections - 35 USC § 101

3. The previous 101 rejection has been withdrawn in light of Applicant's remarks.

Claim Rejections - 35 USC § 112

4. The previous 112 rejection has been withdrawn in light of Applicant's remarks.

Specification

5. The use of the trademark Outlook™ has been noted in this application on page 10, line 7. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 5, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayashi et al. (US 2001/0055390).

Regarding **claims 1 and 8**, Hayashi et al. discloses a method that includes encoding one or more content objects with a steganographic digital watermark

(“embedding a digital watermark in image data” at paragraph 0001, line 2) and an object produced by the process of the encoding (figure 1, numeral w1), the encoding including embedding a collection of features (“registration signal” at paragraph 0093, line 2) that can be used to facilitate computation of geometrical distortion of the object after encoding, the geometric distortion including rotation (“geometric manipulation including rotation” at paragraph 0104, line 3), an improvement including step for making the collection of features resistant to attack (“providing resistance to geometric transformation” at paragraph 0005, line 2).

Regarding **claim 5**, Hayashi et al. discloses a method wherein said step includes obscuring said collection of features by designing same to become apparent only in an alternate domain (figure 4, numeral 0402).

Regarding **claim 9**, Hayashi et al. discloses a watermark detection system (figure 2) for decoding a steganographic digital watermark (“digital watermark extracting apparatus” at paragraph 0112, line 1) from an encoded object (figure 1, numeral w1), the encoding of the object including a template signal (“registration signal” at paragraph 0093, line 2) that aids in determining the corruption of the object, the corruption including rotation (“geometric manipulation including rotation” at paragraph 0104, line 3), the system comprising a watermark decoder adapted to detect the template signal without log-polar remapping (as seen in the details of the watermark extraction process in figures 2 and 60, the template signal is detected without log-polar remapping).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hayashi et al. and Macy et al. (US 6,707,926).

Hayashi et al. discloses the elements of claim 1 as described in the 102 rejection above.

Hayashi et al. does not disclose adding said collection of features in some of said objects, and subtracting said collection of features from other of said objects.

Macy et al. discloses a method that includes encoding ("encoding a template" at col. 6, line 43) one or more content objects ("rows or columns" at col. 6, line 67) with a steganographic digital watermark ("invisible watermark" at col. 2, line 19) wherein said step includes adding said collection of features in some of said objects ("adds the template to the next two rows or columns" at col. 7, line 1), and subtracting said collection of features from other of said objects ("subtracts the template from the first two rows or columns" at col. 6, line 67).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the addition and subtraction of features of Macy et al. in the

improvement step of Hayashi et al. to provide a watermark that can be "used to determine the extent of scaling and/or shifting of the image" (Macy et al. at col. 5, line 37).

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hayashi et al. and Rhoads (US 6,266,430).

Hayashi et al. discloses the elements of claim 1 as described in the 102 rejection above.

Hayashi et al. does not disclose embedding said collection of features at a first scale in a first object, and embedding said collection of features at a second, different orientation in a second object.

Rhoads discloses a method that includes encoding one or more content objects with a steganographic digital watermark ("audio and video signal processing, and more particularly relates to the processing of such signals to embed auxiliary data" at col. 1, line 27) wherein said step includes embedding said collection of features at a first scale (figure 6, numeral 210) in a first object (figure 6, numeral 218), and embedding said collection of features at a second, different scale in a second object ("For each input sample (i.e. look-up table address), the table provides a corresponding 8-bit digital output word. This output word is used as a scaling factor that is applied" at col. 16, line 18).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the scaling of features of Rhoads in the improvement step of

Hayashi et al. to provide a system with a "high degree of statistical confidence" (Rhoads at col. 19, line 55).

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hayashi et al. and Jones et al. (US 6,792,130).

Hayashi et al. discloses the elements of claim 1 as described in the 102 rejection above.

Hayashi et al. does not disclose that said step includes embedding said collection of geometrical features at a first orientation in a first object, and embedding said collection of geometrical features at a second, different orientation in a second object.

Jones et al. discloses a method in the same field of endeavor of digital watermarking ("method for embedding watermarks in digital image sequences" at col. 1, line 9) wherein said step includes embedding said collection of features (figure 7, $C_1(X,Y)$) at a first orientation ("Different carrier images are then formed by spatially transforming 56...transformations can include, but are not limited to: rotations around the carrier image center at 90° increments" at col. 7, line 37) in a first object (first frame), and embedding said collection of features at a second, different orientation (figure 7, $C_2(X,Y)$) in a second object (second frame).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the spatial transformation of Jones et al. to embed the registration signal of Hayashi et al. to “improve performance under certain types of removal attacks and/or allows for the amplitude of the watermark to be reduced to a lower level” (Jones et al. at col. 8, line 5).

Response to Arguments

Summary of Remarks (@ response page labeled 3): The action has not shown that the requirements of 112 6th paragraph language for claim 1 have been met.

Examiner's Response: A typographical error in the examiner's previous response has been noted, which is the reason for the deficiency. The examiner intended to say that the "step for making" is defined by the limitations of claims 2-5, which were addressed in their respective rejections. Therefore, the 112 6th limitations were met in the previous Office Action.

Allowable Subject Matter

Art Unit: 2624

12. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record, in particular Wendt (US 6,865,273), does not teach the specific method steps of detecting the template signal without log-polar remapping as stated in claim 6 that are invoked by 35 U.S.C. 112 sixth paragraph, indicated in Applicant's remarks on page labeled 6. The specific steps not taught by the prior art are as follows:

"First, find local maxima on half of the Fourier magnitude array. Then use the 90-degree rotation symmetry of the template to eliminate most of the local maxima in a quadruple, where in this stage certain tolerance is added. Third, check each pair of the left maxima in the quadruple to see if the angle between them and the ratio of their radial distances to the origin make them a pair of points on our template or not. If they are, what scale factor and orientation angle of the template in this case. After running through the total of about 50 maxima (for 128 x 128 block), accumulated count on a particular orientation and scale factor will indicate what orientation and scale factor will indicate what the orientation and scale factor of the gird is when there is a template signal. A threshold is used to judge if there is a template signal or not." (found in the specification on page 4).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wendt (US 6,865,273) is pertinent as disclosing a method and apparatus that detects a watermark that is resistant to certain geometric transformations.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katrina Fujita whose telephone number is (571) 270-1574. The examiner can normally be reached on M-Th 8-5:30pm, F 8-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Katrina Fujita/
Examiner, Art Unit 2624

/Vikkram Bali/
Supervisory Patent Examiner, Art Unit 2624